

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

ULTRAVISION TECHNOLOGIES, LLC

Plaintiff,

v.

LAMAR ADVERTISING COMPANY,
LAMAR MEDIA CORP., THE LAMAR
COMPANY, L.L.C., LAMAR TEXAS
LIMITED PARTNERSHIP, LIGHTING
TECHNOLOGIES, INC., AND IRVIN
INTERNATIONAL, INC.

Defendants.

LAMAR ADVERTISING COMPANY,
LAMAR MEDIA CORP., THE LAMAR
COMPANY, L.L.C., LAMAR TEXAS
LIMITED PARTNERSHIP, LIGHTING
TECHNOLOGIES, INC., AND IRVIN
INTERNATIONAL, INC.

Counterclaim Plaintiffs,

v.

ULTRAVISION TECHNOLOGIES, LLC

Counterclaim Defendant.

Civil Action No. 2:16-cv-374-JRG-RSP

JURY TRIAL REQUESTED

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	CLAIM CONSTRUCTION LEGAL STANDARDS.....	2
III.	PERSON OF ORDINARY SKILL IN THE ART.....	2
IV.	ANALYSIS OF DISPUTED CLAIM TERMS	3
	A. Indefinite Terms.....	3
	1. Uniformly Illuminate / Uniform Illumination.....	3
	a. There Is No Standard By Which To Evaluate “Uniformity”	4
	b. Ultravision’s Arguments Fail.....	7
	2. Substantially Uniform.....	9
	a. There Is No Standard By Which To Evaluate “Substantially”	9
	b. Ultravision’s Remaining Arguments Fail	10
	3. Minimal Amount of Illumination / Minimum Illumination / Substantially No Illumination	12
	a. There Is No Standard By Which To Evaluate These Terms.....	12
	b. Ultravision’s Remaining Arguments Fail	14
	B. Optical Element	16
	1. Molded vs Assembled Lenses.....	17
	2. The Claims Support Defendants’ Construction	18
	3. The Specification Supports Defendants’ Construction.....	20
	4. The Prosecution History Supports Defendants’ Construction	21
	5. Ultravision’s Argument That No Construction Is Necessary Fails	23
	6. Ultravision’s Additional Arguments Also Fail	24
	7. Ultravision’s Proposed Construction Should Be Rejected	26
	C. Means for Directing Light	27
V.	CONCLUSION.....	30

TABLE OF AUTHORITIES

CASES

<i>Altiris, Inc. v. Symantec Corp.</i> , 318 F.3d 1363 (Fed. Cir. 2003)	28
<i>Cadence Pharm. Inc. v. Exela PharmSci Inc.</i> , 780 F.3d 1364 (Fed. Cir. 2015)	26
<i>Dell Inc. v. Acceleron, LLC</i> , 818 F.3d 1293 (Fed. Cir. 2016)	10
<i>Desper Prods., Inc. v. QSound Labs, Inc.</i> , 157 F.3d 1325 (Fed. Cir. 1998)	24
<i>Dimension One Spas, Inc. v. Coverplay, Inc.</i> , No. 03cv1099, 2005 WL 6258667 (S.D. Cal. Dec. 2, 2005).....	19
<i>Dow Chem. Co. v. Nova Chems. Corp. (Canada)</i> , 803 F.3d 620 (Fed. Cir. 2015)	7
<i>Enviroco Corp. v. Clestra Cleanroom, Inc.</i> , 209 F.3d 1360 (Fed. Cir. 2000)	29
<i>Enzo Biochem, Inc. v. Applera Corp.</i> , 599 F.3d 1325 (Fed. Cir. 2010)	15
<i>Fairfield Indus., Inc. v. Wireless Seismic, Inc.</i> , No. 4:14-CV-2972, 2015 WL 1034275 (S.D. Tex. Mar. 10, 2015)	9
<i>Freeman v. Gerber Prods. Co.</i> , 120 F. App'x 322 (Fed. Cir. 2005).....	30
<i>Geodynamics, Inc. v. Dynaenergetics US, Inc.</i> , No. 2:15-cv-1546, 2016 WL 6217181 (E.D. Tex. Oct. 25, 2016)	9
<i>Glick v. U.S. Toy Co.</i> , No. 01-0260-CV-W-3, 2001 WL 36169593 (W.D. Miss. Nov. 19, 2001)	19
<i>Greenberg v. Ethicon Endi-Surgery, Inc.</i> , 91 F.3d 1580 (Fed. Cir. 1996)	29
<i>Hayes Lemmerz Int'l, Inc. v. Kuhl Wheels, LLC</i> , No. 03-cv-70181, 2007 WL 1219043 (E.D. Mich. Apr. 25, 2007)	19
<i>Intel Corp. v. VIA Techs., Inc.</i> , 319 F.3d 1357 (Fed. Cir. 2003)	28

<i>Interval Licensing LLC v. AOL, Inc.</i> , 766 F.3d 1364 (Fed. Cir. 2014)	3, 12
<i>Invitrogen Corp. v. Biocrest Mfg., L.P.</i> , 424 F.3d 1374 (Fed. Cir. 2005)	16
<i>Kemco Sales, Inc. v. Control Papers Co.</i> , 208 F.3d 1352 (Fed. Cir. 2000)	27, 28
<i>Knopik v. Amoco Corp.</i> , 96 F. Supp. 2d 892 (D. Min. 2000), <i>aff'd</i> , 95 F. App'x 332 (Fed. Cir. 2004).....	21
<i>Liberty Ammunition, Inc. v. United States</i> , 835 F.3d 1388 (Fed. Cir. 2016)	3
<i>Mangosoft, Inc. v. Oracle Corp.</i> , 525 F.3d 1327 (Fed. Cir. 2008)	25
<i>Max Blu Techs., LLC v. Cinedigm Corp.</i> , No. 2:15-cv-1367, 2016 WL 3688801 (E.D. Tex. July 12, 2016).....	11
<i>Microsoft Corp. v. Multi-Tech Sys., Inc.</i> , 357 F.3d 1340 (Fed. Cir. 2004)	25
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 134 S. Ct. 2120 (2014)	3, 13, 16
<i>Nexus Display Techs. LLC v. Dell Inc.</i> , No. 2:14-cv-762, 2015 WL 5578735 (E.D. Tex. Sep. 22, 2015)	9
<i>Nystrom v. Trex Co.</i> , 424 F.3d 1136 (Fed. Cir. 2005)	2, 26
<i>O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.</i> , 521 F.3d 1351 (Fed. Cir. 2008)	24
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)	2, 24
<i>Rheox, Inc. v. Entact, Inc.</i> , 276 F.3d 1319 (Fed. Cir. 2002)	2
<i>SmithKline Beecham Corp. v. Apotex Corp.</i> , 403 F.3d 1331 (Fed. Cir. 2005)	16
<i>Soverain Software LLC v. Newegg Inc.</i> , 705 F.3d 1333 (Fed. Cir. 2013)	12

<i>Tech Props. Ltd. v. Huawei Techs. Co.,</i> 2016-1306, slip op. (Fed. Cir. Mar. 3, 2017).....	23
<i>TecSec, Inc. v. IBM,</i> 731 F.3d 1336 (Fed. Cir. 2013)	30
<i>Teva Pharm. USA, Inc. v. Sandoz, Inc.,</i> 789 F.3d 1335 (Fed. Cir. 2015)	7, 25
<i>Thorn EMI N. Am., Inc. v. Intel Corp.,</i> 936 F. Supp. 1186 (D. Del. 1996)	10
<i>Union Pac. Res. Co. v. Chesapeake Energy Corp.,</i> 236 F.3d 684 (Fed. Cir. 2001)	26
<i>Vasudevan Software, Inc. v. MicroStrategy, Inc.,</i> 782 F.3d 671 (Fed. Cir. 2015)	11, 14
<i>Vstream Techs., LLC v. PLR Holdings, LLC,</i> No. 6:15cv974, 2016 WL 6211550 (E.D. Tex. Sep. 27, 2016).....	8, 10

STATUTES

35 U.S.C. § 112.....	<i>passim</i>
----------------------	---------------

TABLE OF EXHIBITS

EXHIBIT A Declaration of Dr. Julie L. Bentley in Support of Defendants' Claim Construction Positions

EXHIBIT 1 US Patent No. 8,002,435

EXHIBIT 2 US Patent Application Publication No. 2006/0076568

EXHIBIT 3 US Patent Application Publication No. 2011/0038151

EXHIBIT 4 US Patent Application Publication No. 2014/0268761

EXHIBIT 5 US Patent No. 7,618,163

EXHIBIT 6 US Patent No. 7,942,559

EXHIBIT 7 Smith, W., "Modern Lens Design" McGraw Hill, 2005

EXHIBIT 8 US Patent No. 9,212,803

EXHIBIT B US Patent No. 8,210,723

EXHIBIT C US Patent No. 8,602,599

EXHIBIT D Whang, A. et al., "Designing Uniform Illumination Systems by Surface-Tailored Lens and Configurations of LED Arrays," *Journal Of Display Technology*, Vol. 5, No. 3, March 2009

EXHIBIT E Moreno, I. et al., "Effects on illumination uniformity due to dilution on arrays of LEDs," *Proc. SPIE Nonimaging Optics and Efficient Illumination System II*, vol. 5529, pp. 268-275, August 2004

EXHIBIT F OAAA, LED Lighting Guidance for Outdoor Advertising Owners and Operators (May 2013)

EXHIBIT G Lee, H. et al., "Improvement of illumination uniformity for LED flat panel light by using micro-secondary lens array" *Optics Express*, Vol. 20, No. S6, November 2012

EXHIBIT H US Patent No. 8,870,410

EXHIBIT I US Patent No. 7,896,522

EXHIBIT J US Patent Application Publication No. 2011/0149548

EXHIBIT K Excerpt from MPEP

EXHIBIT L International Dark-Sky Association, Model Lighting Ordinance with User's Guide (June 15, 2011)

EXHIBIT M Excerpt from File History of US Patent No. 9,212,803, Oct. 16, 2015 Amendment

EXHIBIT N Excerpt from File History of US Patent No. 9,212,803, July 17, 2015 Office Action

I. INTRODUCTION

The issues before the Court are few and straight forward: (a) Are a handful of claim terms indefinite? (b) Are another handful of claim terms limited to one of two disclosed embodiments? and (c) Has Ultravision rebutted the presumption 35 U.S.C. § 112, ¶ 6 applies to one term?

As to the first issue, Defendants explain that, despite the undisputed fact that illumination is easily and commonly quantified in the outdoor advertising industry, approximately a dozen claims (of the 79 asserted) use terms of degree, such as “uniform” and “minimal” illumination, without providing the requisite guidance for understanding their scope. Ultravision argues that the required guidance is provided by structural limitations (e.g., “billboard”) that have nothing to do with determining the claimed degree of illumination and by unproven aspirational statements in the specification (e.g., avoiding “hot spots”). As to the second issue, Defendants argue that the term “optical elements” in a dozen claims is limited to optical elements that are assembled from separated lens elements. That conclusion is compelled by the claim language, the specification, and Ultravision’s arguments to the Patent Office. For its part, Ultravision attempts a series of baseless legal arguments as to why it should not be bound to the deal it struck with the Patent Office. As to the third issue, Ultravision argues that “means for directing light” does not invoke 35 U.S.C. § 112, ¶ 6 because the claim includes various structural elements. It is Defendants’ position that Ultravision cannot carry that burden when it is not possible to understand those structural elements without referring to the patent figure that they attempt to describe.

For these reasons, as set forth more fully below, Defendants respectfully request that the Court adopt its proposed constructions and find the specified terms invalid as indefinite.

II. CLAIM CONSTRUCTION LEGAL STANDARDS¹

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). Claim terms are construed to have their “ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. Claim construction begins with a review of the intrinsic evidence, which includes the claim language, specification, prosecution history, and cited references. *Id.* at 1312-17. The specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Id.* at 1315 (citation omitted). Further, “[a]rguments made during prosecution to overcome prior art can lead to narrow claim interpretations.” *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1325 (Fed. Cir. 2002). “[A]s explained in *Phillips*, [a patentee] is not entitled to a claim construction divorced from the context of the written description and prosecution history ...” *Nystrom v. Trex Co.*, 424 F.3d 1136, 1144-45 (Fed. Cir. 2005); *see also Phillips*, 415 F.3d at 1320-21.

III. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art would have been a member of a collaborative team that included an individual with at least approximately 5 years of experience in the outdoor

¹ None of the self-serving commentary in Ultravision’s “Background” (Pl. Br. at 1-2) is relevant to the claim construction issues before the Court and so Defendants do not address them here. To be clear, however, it is Defendants’ position that the patents-in-suit are paper patents, cobbled together from the prior art and Lamar’s own inventions. They are replete with descriptions about obvious mechanical structures that “may be configured ... to dissipate heat” (cooling fins) and “may be configured to protect ... from moisture” (water-tight enclosures). And they illustrate what purport to be aspirational LED lens structures that are touted – without a shred of supporting evidence or explanation – to avoid “‘hot spots’ that may be undesirable” and avoid light that “may ... be directed past the edges” of a billboard.

advertising industry and an individual who has a Bachelor and an advanced degree (either Master or Doctoral degrees) in engineering, physics, or optics, or equivalent, with approximately four years of experience in the field of optical and illumination design or lighting design. A member of this collaborative team would also be familiar with various light sources, including light emitting diodes, and understand how to model those sources to facilitate the lens design process.

Ex. A (“Bentley Decl.”) at ¶ 20.

IV. ANALYSIS OF DISPUTED CLAIM TERMS

A. Indefinite Terms

“A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). When a patentee uses a term of degree, it is not enough that the claim provide merely “*some standard* for measuring” the term of degree. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014) (emphasis in original).² Rather, the claim must provide “objective boundaries” as to what is and is not encompassed by the claim language. *Id.* at 1371; *see also Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388, 1397 (Fed. Cir. 2016) (noting that objective boundaries is an “exacting … standard”).

1. Uniformly Illuminate / Uniform Illumination

Claim Term	Defendants’ Construction	Ultravision’s Construction
“uniformly illuminate” / “uniform illumination” ³ '642: 13 '307: 12, 13 '803: 16	Indefinite	No construction necessary. If Court deems construction necessary, “does not create hot spots or dead spots”

² All emphasis in this brief has been added by Defendants, unless identified as otherwise.

³ For ease of reference, Defendants refer to the two terms in this section interchangeably.

The terms “uniformly illuminate” and “uniform illumination” are indefinite. The parties agree that the term “uniform,” as relates to the art of billboard illumination, does not have its plain and ordinary English meaning (*i.e.*, “not changing in form or character; remaining the same in all cases and at all times”), but instead is a term of degree. So is, *a fortiori*, the term “substantially uniform” addressed in the next section. Yet neither the intrinsic nor extrinsic evidence provides a standard by which a person of ordinary skill in the art could judge whether these terms of degree are satisfied in the asserted claims. In the absence of any such guidance, the patents fail to provide reasonable certainty of the claim scope, and are therefore indefinite.

a. There Is No Standard By Which To Evaluate “Uniformity”

As both parties’ technical tutorials explain, the billboard and lighting industries have long recognized the need for lighting systems which ensure that a satisfactory amount of illumination is provided over the entire surface of the billboard. To serve this need, different quantitative formulas to measure uniformity have been developed, which are invariably expressed in the form of a ratio of the minimum illumination value measured on the surface of the board to some other (higher) illumination value measured on the surface of the board, *i.e.*, (a) the maximum, (b) the average, or (c) the difference between maximum and minimum.

Specifically, the prior art cited on the face of the patents-in-suit provides at least three different equations for calculating “uniformity” of illumination. The first set of references in the chart below calculates uniformity by comparing the *maximum* illumination on the board, represented as E_{Max} , to the *minimum* illumination on the board, represented as E_{Min} , or vice versa. The OAAA⁴ Lighting Guidance cited by Ultravision also uses this calculation:

⁴ The Outdoor Advertising Association of America (founded in 1891) is the lead trade association representing the out of home advertising industry. Lamar, (founded in 1902) is the

Reference	E _{Max} : E _{Min} Formula
U.S. Pat. No. 8,210,723, Ex. B, at 1:50-51, and U.S. Pat. No. 8,602,599, Ex. C, at 2:20-21	“a ratio of 10 to 1 between the highest and lowest illuminance values”
Whang, A. et al., “Designing Uniform Illumination Systems by Surface-Tailored Lens and Configurations of LED Arrays,” <i>Journal Of Display Technology</i> , Vol. 5, No. 3, March 2009, Ex. D, at 94, 102	“Uniformity = $\frac{E_{Min}}{E_{Max}}$ ”
Moreno, I. et al., “Effects on illumination uniformity due to dilution on arrays of LEDs,” <i>Proc. SPIE Nonimaging Optics and Efficient Illumination System II</i> , vol. 5529, 268-275, August 2004, Ex. E, at 269 ⁵	“the minimum-to-maximum irradiance ratio R over the illuminated area, where $R = \frac{E_{Min}}{E_{Max}}$ ”
OAAA LED Lighting Guidance for Outdoor Advertising Owners and Operators, Ex. F at 1, 2.	“Uniformity of Illumination: The min-to-max ratio of readings taken in adjacent areas of a target” wherein the ratio does not exceed 2:1 ⁶

A second set of prior art references in the chart below calculates uniformity by comparing the *average* illumination, represented as E_{Ave}, to the *minimum* illumination (E_{Min}). This is also the approach used by the specification of the patents-in-suit to define the distinct term “evenly.”

Reference	E _{Ave} : E _{Min} Formula
Lee, H. et al., “Improvement of illumination uniformity for LED flat panel light by using micro-secondary lens array” <i>Optics Express</i> , Vol. 20, No. S6, November 2012, Ex. G, at A790	“ $U = \frac{E_{Min}}{E_{Ave}}$, where U denotes the performance of illumination uniformity, and E_{min} and E_{ave} denote the minimum illumination and average illumination respectively”
Patents-in-suit (defining “evenly,” distinct from “uniformly”). <i>See</i> ,	“illumination with a uniformity that achieves a 3:1 ratio of the average illumination to the minimum”

oldest and one of the largest outdoor advertising companies in America and has been a leading voice in the OAAA for over a century.

⁵ Moreno is cited in the Whang reference, but not identified on the patents-in-suit. *See* Ex. D at 103.

⁶ The OAAA guidelines relied upon by Ultravision actually provide two separate calculation methodologies. In addition to the “min-to-max ratio,” they also calculate uniformity by comparing the values between adjacent measured areas. Ex. F at 1, 2.

<i>e.g., Ex. H (“410 patent”) at 5:14-16.</i>	
---	--

The Moreno reference also provides yet a third “tool to quantify uniformity of illumination,” comparing the *difference between maximum and minimum* illumination across a board, $E_{Max} - E_{Min}$, to the *minimum* illumination.

Reference	$(E_{Max} - E_{Min}) : E_{Min}$ Formula
Moreno, <i>supra</i> , at 269 (Ex. E).	“($E_{Max} - E_{Min}$)/ E_{Max} , where E_{Max} and E_{Min} are the maximum and minimum values of irradiance”

Significantly, these three known formulas for calculating “uniformity” of illumination do not give consistent results. To show the differences in claim scope that would result from each of these three equations from the cited prior art, the chart below applies these equations to the set of LED illumination measurements provided in the prior art Heller patent, U.S. Patent No. 7,896,522, Ex. I at 7:27-30, (maximum of 99.0 lux, average of 48.9 lux and minimum of 12.6 lux), resulting in significantly different ratios:

Equation	Raw Ratio	Simplified Ratio
$E_{Max} : E_{Min}$	99.0 : 12.6	7.9 : 1
$E_{Ave} : E_{Min}$	48.9 : 12.6	3.9 : 1
$(E_{Max} - E_{Min}) : E_{Min}$	86.4 : 12.6	6.9 : 1

As shown in the second table of formulas above, in the context of that contradictory intrinsic evidence, the named inventors chose to define the term “evenly” (an example of a desired level of uniformity) to mean “illumination with a uniformity that achieves a 3:1 ratio of the average illumination to the minimum.” ’410 patent at 5:14-16. By inference – and as Ultravision concedes (Dkt. 164 (“Pl. Br.”) at 10-11) – “uniform” illumination must be different than the “3:1 ratio of the average illumination to the minimum” that defines “even” illumination. However, claim 13 of the ’642 patent, claims 12-13 of the ’307 patent and claim 16 of the ’803 patent characterize the recited

illumination as “uniform” instead of “even” but do not recite either (a) how such “uniform” illumination in the broader sense is to be calculated (*i.e.*, which ratio to use) or (b) what value or range of values that “uniform” illumination might have (*i.e.*, 3:1 or other values).

The common specification of Ultravision’s asserted patents does not provide any guidance on the meaning of “uniformity” either. As such, the recited terms “uniformly illuminate” and “uniform illumination” are indefinite. *See, e.g., Dow Chem. Co. v. Nova Chems. Corp. (Canada)*, 803 F.3d 620, 634 (Fed. Cir. 2015) (concluding claim is indefinite where multiple calculation methods exist leading to different results, without guidance as to which should be used); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1345 (Fed. Cir. 2015).

b. Ultravision’s Arguments Fail

Ultravision attempts to save these claims by pointing to various structural features of the asserted claims, such as a “billboard,” a “support structure,” a “display surface,” and a “lighting assembly” having a “plurality of light emitting diodes (LEDs) and a plurality of optical elements.” Pl. Br. at 11-13. But none of these terms provide any insight into what degree of illumination is “uniform,” and Ultravision does not explain what connects these various structural features to any standard for what is meant by “uniformly” illuminating the billboard. Identifying the “target” and the “location” of the illumination, or identifying the means by which the illumination is created, does not provide boundaries as to what constitutes “uniform” illumination and what does not.

Ultravision also incorrectly asserts that the specification’s reference to “hot spots” and “dark spots” provides guidance to a person of ordinary skill in the art as to the standard or measure for “uniform” illumination. The specification of the patents-in-suit describes “hot spots” and “dark spots” as relative and subjective. ’410 patent at 2:55-58 (“One problem with uneven illumination is that certain parts of the surface 102 may be more brightly illuminated than other parts. This

creates “hot spots” that *may be undesirable.*”). Neither the specification nor any of the references cited by Ultravision provide a way to determine the relative potential “undesirability” of hot spots or dark spots. Substituting one subjective measure for another cannot render an indefinite term definite. *See Vstream Techs., LLC v. PLR Holdings, LLC*, No. 6:15cv974, 2016 WL 6211550, at *7 (E.D. Tex. Sep. 27, 2016) (finding both claim term and its proposed construction indefinite). And Ultravision provides no explanation for why a person of ordinary skill in the art would have understood the patents’ reference to the subjective and potential “undesirability” of hot spots and perhaps dark spots to be the relevant standard for the term “uniformly” without considering the named inventors’ quantitative 3:1 ratio described above for “even” illumination.

This problem is underscored by Ultravision’s reliance on the OAAA guidelines. The OAAA guidelines do not equate uniformity with the absence of hot spots, as Ultravision asserts. First, as noted above, the OAAA guidelines provide two formulas for assessing uniformity of illumination. *See* footnote 7, *supra*. Second, the portion of the OAAA guidelines quoted by Ultravision refers to the plane of illumination being “free of *shadows, hot spots, flares or other errors.*” Pl. Br. at 13. The OAAA guidelines teach that shadows, flares, and other errors are concerns distinct from the presence of hot spots. Yet, Ultravision fails to explain why one of skill in the art would purportedly only find the OAAA guidelines’ reference to “hot spots,” but not shadows, flares, and other errors, relevant to obtaining the claimed “uniform illumination.” Moreover, the OAAA guidelines make no mention of dark spots or dead spots, which Ultravision suggests relate to “uniformity.”

Accordingly, the terms “uniform illumination” and “uniformly illuminate” are indefinite, as the specification, prosecution history, and intrinsic and extrinsic evidence all fail to provide a person of ordinary skill in the art with reasonable certainty as to the bounds of the claim scope.

2. Substantially Uniform

Claim Term	Defendants' Construction	Ultravision's Construction
“substantially uniform” '410: 10, 27	Indefinite	No construction necessary. If Court deems construction necessary, “does not create hot spots or dead spots”

Making matters worse, claims 10 and 27 of the '410 patent expand the already indefinite term “uniform illumination” to “*substantially* uniform.” But again, nothing in the specification allows a person of ordinary skill to understand what threshold level of uniformity (which is itself undefined) satisfies these claims. Because Ultravision points to no evidence that clarifies the threshold, this term is invalid. *See, e.g., Geodynamics, Inc. v. Dynaenergetics US, Inc.*, No. 2:15-cv-1546, 2016 WL 6217181, at *15 (E.D. Tex. Oct. 25, 2016) (“substantially equal” clause held indefinite where the specification only refers to “equal” instances, rather than “substantially equal”); *Fairfield Indus., Inc. v. Wireless Seismic, Inc.*, No. 4:14-CV-2972, 2015 WL 1034275, at *16 (S.D. Tex. Mar. 10, 2015) (indefinite where “use of the word ‘substantially’ ... injects a question of degree” which “finds no answer in the intrinsic evidence”); *Nexus Display Techs. LLC v. Dell Inc.*, No. 2:14-cv-762, 2015 WL 5578735, at *8 (E.D. Tex. Sep. 22, 2015) (term of degree indefinite because it “provides no indication of how much smaller any difference must be” in order to infringe the claim).

a. There Is No Standard By Which To Evaluate “Substantially”

In fact, the logic underlying *Geodynamics* applies exactly to this situation. The phrase “substantially uniform” does not appear anywhere in any of the patents-in-suit, other than in the claims at issue. Instead, only the phrase “uniform” illumination is used, and then only to provide context for the specifically desired level of uniformity described as “even” illumination – which Ultravision concedes must mean something other than “substantially” uniform. *See* '410 patent at

5:14-16; Pl. Br. at 1. This does not provide a person of ordinary skill with reasonable certainty as to the scope of the claim. *See Vstream Techs.*, 2016 WL 6211550, at *6. To the contrary, the adjective “substantially” used here is “useless as a guide to understanding” the bounds of these claims. *Thorn EMI N. Am., Inc. v. Intel Corp.*, 936 F. Supp. 1186, 1199 (D. Del. 1996).

For its part, Ultravision does not even attempt to explain away the “zone of uncertainty” created by its use of the term “substantially” in relation to already indefinite term “uniform” illumination. Instead, Ultravision proposes that “substantially uniform” should be given the same construction as “uniform illumination,” and “uniformly illuminate,” *i.e.*, “does not create hot spots or dead spots.” Pl. Br. at 4, 11. But construing all three terms identically would improperly read the term “substantially” out of the asserted claims. *Dell Inc. v. Acceleron, LLC*, 818 F.3d 1293, 1300 (Fed. Cir. 2016) (noting the “claim construction principle that meaning should be given to all of a claim’s terms”). Unable to point to any evidence that a person of ordinary skill in the art would be informed with reasonable certainty that the scope of the claim term “substantially uniform” illumination is the same as “uniform” illumination, Ultravision instead doubles down on its argument that “uniformity” is somehow related to the patents’ aspiration of avoiding hot spots and/or dark spots. But just as that argument fails to save the terms “uniformly illuminate” and “uniform illumination,” it likewise fails to save the term “substantially uniform.”

b. Ultravision’s Remaining Arguments Fail

Having struck out with the intrinsic evidence, Ultravision attempts to suggest that Defendants’ marketing materials establish that a person of ordinary skill would have understood the bounds of the term “substantially uniform.” However, the phrase “substantially uniform” does not actually appear in any of the cited marketing materials and the Federal Circuit has expressly disapproved of relying on marketing materials during claim construction, calling it “of scant import.” *See Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 678 (Fed. Cir. 2015)

(“Language used in marketing materials directed to potential customers can mean something quite different from the language used in a patent directed to persons skilled in the art.”).

Ultravision’s *reliance* on the OAAA guidance is likewise misplaced. The phrase “substantially uniform” also does not appear in the OAAA guidance, and, as explained above in Section IV(A)(1), the OAAA guidance provides quantifiable ratios for determining whether illumination is, or is not, “uniform,” and does not provide a range of variance that would qualify as “substantially uniform.” Critically, neither does the common specification of Ultravision’s asserted patents. Compare, *e.g.*, prior art patent application US 2011/0149548, Ex. J, at ¶ [0051] (specifying that “substantially uniform” means that the “variance is typically less than about 10%” over the surface of the display area). Without it, this term is invalid as indefinite.

Finally, Ultravision’s cited authority is inapposite. First, the patents at issue in *Max Blu Techs.*, unlike Ultravision’s patents, provided a specific, comparative example that would have informed a person of ordinary skill in the art of the bounds of the claim term “substantially flat and coplanar.” *See Max Blu Techs., LLC v. Cinedigm Corp.*, No. 2:15-cv-1367, 2016 WL 3688801, at *28-29 (E.D. Tex. July 12, 2016). The Court noted that the patents at issue “explain[ed] that in an embodiment, the replica-disk land tops are level and extend to the same height relative to the opposite surface of the disk to the precision of the flatness of the master disk substrate.” *Id.* at *28. Ultravision’s reliance on the Manual of Patent Examining Procedure (MPEP) is likewise inapposite. Pl. Br. at 4.⁷ The referenced section of the MPEP (citing *Interval Licensing*, 766 F.3d at 1371-72) makes clear that where the specification fails to provide sufficient

⁷ Dr. Coleman’s purported opinions regarding compliance with the MPEP should be disregarded as improper attorney opinion from an expert witness. *See* Coleman Decl. ¶¶ 23, 24, 33, 37, 48; *see Soverain Software LLC v. Newegg Inc.*, 705 F.3d 1333, 1341 (Fed. Cir. 2013) (expert opinion on legal conclusion is “neither necessary nor controlling” “nor indeed ‘evidence’ at all”) (citation omitted).

guidance as to the objective boundaries of a subjective claim term, as is the case here, the specification does not render the term definite. Ex. K (MPEP § 2173.05(b)).

For the foregoing reasons, the term “substantially uniform” is indefinite. The specification, prosecution history, and cited evidence all fail to provide a person of ordinary skill in the art with reasonable certainty as to the bounds of the claim scope.

3. Minimal Amount of Illumination / Minimum Illumination / Substantially No Illumination

Claim Term	Defendants' Construction	Ultravision's Construction
“minimal amount of illumination” / “minimum illumination” ⁸ ’413: 16 ’642: 21 ’307: 22, 28	Indefinite	No construction necessary. If Court deems construction necessary, “avoids light pollution”
“substantially no illumination” ⁹ ’410: 12, 28 ’413: 2, 17	Indefinite	No construction necessary.

The terms “minimal amount of illumination,” “minimum illumination,” and “substantially no illumination” are likewise terms of degree that are indefinite. Neither the intrinsic nor extrinsic evidence provides any standard by which a person of ordinary skill in the art could understand with reasonable certainty how much or how little illumination may “spill” beyond the edges of the display surface without satisfying these limitations.

a. There Is No Standard By Which To Evaluate These Terms

First, neither the phrase “minimum illumination” nor the phrase “substantially no illumination” even appears in the specification. And the phrase “minimal amount of illumination”

⁸ For ease of reference, Defendants refer to the two terms in this section interchangeably.

⁹ Although Ultravision argues this term separately, it is indefinite for the same reasons as “minimal amount of illumination” and “minimum illumination.” Therefore, Defendants address all three terms together.

only appears once, and then only in expressing the goal that “areas beyond the edges … would receive no illumination at all or at least a minimal amount of illumination from the LED.” ’410 patent at 5:9-14. That is the sum total of the patents’ description of these three terms: an aspirational statement of the goal of allowing little or no light spillage, without any description (let alone objective guidance) of how much light may be allowed to escape in order to fall within the scope of these claims or how to accomplish that goal. That description does not provide one of skill in the art with reasonable certainty about the scope of the alleged invention.

As it does with its attempted defense of the terms “uniform” and “substantially uniform” illumination, Ultravision argues that these terms are definite “in view of the overall context of the claims” because they “speak directly to the structure of the lighting assemblies.” Pl. Br. at 16. But the “context” to which Ultravision points are merely structural features which provide no guidance as to what amount of lost illumination qualifies as a “minimal amount of illumination,” “minimum illumination,” or “substantially no illumination.” The intrinsic evidence does not overcome the “zone of uncertainty” that makes this claim indefinite. *Nautilus*, 134 S. Ct. at 2123.

Next, Ultravision cherry-picks instances where the specification mentions “light pollution” and argues that these passages constitute “concrete examples that inform the scope.” Pl. Br. at 16. But these excerpts merely identify light pollution as a “problem,” and do nothing to inform the objective boundaries of the claim terms at issue. In fact, nothing in the specification even links the existence of “light pollution” or “wasted illumination” to the terms “minimal amount of illumination,” “minimum illumination,” or “substantially no illumination” – let alone provides any guidance as to how little light spillage is required to satisfy these claim limitations. Presumably, that lack of connection allows Ultravision to take the inconsistent positions that, on the one hand the context of “avoid[ing] creating light pollution and wasting energy” supports the construction

of the terms “minimal amount of illumination” and “minimum illumination” as “avoids light pollution” (Pl. Br. at 16), but on the other that same context does not support any such context-dependent construction for the term “substantially no illumination” (Pl. Br. at 20).

b. Ultravision’s Remaining Arguments Fail

With respect to the extrinsic evidence, Ultravision’s heavy reliance on Defendants’ marketing materials is inappropriate for the same reasons discussed with regards to the term “substantially uniform.” *See Section IV(A)(2), supra.* While patent claims must provide reasonable certainty to a person of skill in the art, marketing materials are neither created for that purpose nor directed to that audience. Instead, marketing materials are directed to customers, so even the same language can “mean something quite different” from its usage in a patent. *See Vasudevan Software, 782 F.3d at 678.*

Ultravision incorrectly claims that the use of the term “Dark Skies” in Defendants’ marketing materials establishes a “common understanding … of the need to limit light spillage.” Pl. Br. at 18. However, as with the aspirational goals found in the specification, an abstract “need to limit light spillage” does not provide a person of ordinary skill in the art the objective boundaries of terms such as “minimum illumination.” To the contrary, the Model Lighting Ordinance drafted by the International Dark-Sky Association and cited by Ultravision itself demonstrates that there is no “commonly understood standard” (Pl. Br. at 18) for what constitutes minimum illumination in the context of outdoor advertising. Ex. L (“MLO”).

First, a section of the MLO not mentioned by Ultravision explicitly states that billboard lighting is *exempt* from the Model Lighting Ordinance. MLO at 8. (“The following are not regulated by this Ordinance … Lighting solely for signs”). In other words, the MLO is not relevant to the issue at hand. Second, the MLO allows for differences of more than an order of magnitude

of allowable lumens for the very same light fixture depending on where that fixture is placed, and what time of day or night it is. *See* MLO at 10, 22, 24. Specifically, the MLO proposes five different lighting zones (“LZ”) based on the location of the light fixture to be evaluated, ranging from LZ0 (“no ambient light” for “wilderness areas”) to LZ4 (“high ambient lighting”). MLO at 6-7. Each zone has a separate threshold for allowable light, measured in lumens per square foot:

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Base Allowance				
0.5 lumens per SF of Hardscape	1.25 lumens per SF of Hardscape	2.5 lumens per SF of Hardscape	5.0 lumens per SF of Hardscape	7.5 lumens per SF of Hardscape

MLO at 24. Thus if the boundaries of “minimum illumination” were to be defined by the proposed location-dependent standards of the MLO (which do not apply to outdoor advertising), the claims in question would be indefinite, as the same accused product may infringe and not infringe depending on its geographic location and the vagaries of implementing municipal ordinances.

Finally, the case law on which Ultravision relies is inapposite. For instance, in *Enzo Biochem, Inc. v. Applera Corp.*, the intrinsic evidence provided “a general guideline and examples” sufficient to define the term of degree, and the court specifically noted that the specification contained “a range of exemplary values.” 599 F.3d 1325, 1335 (Fed. Cir. 2010). Ultravision’s patents do not. In *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1340-41 (Fed. Cir. 2005), the issue had nothing to do with the bounds of the claimed chemical structure, but rather with the fact that defendants in that case did not know whether their own product contained it. *See id.* at 1341 (“this claim recites in clear terms a discernible chemical structure ... the problem for Apotex is that it cannot accurately ascertain the nature of its own product”).¹⁰ That

¹⁰ *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374 (Fed. Cir. 2005) is also inapposite. Pl. Br. at 18. There, the accused infringer argued that the claim was indefinite because it could not determine whether it infringed until it practiced the invention. *Invitrogen*, 414 F.3d at 1384. The

is not the issue here, and Ultravision does not contend otherwise. Defendants are perfectly capable of measuring light spillage. However, nothing in the patents either informs Defendants or would have informed a person of ordinary skill in the art whether those measurements do or do not qualify as a “minimum amount of illumination” recited in the asserted claims.¹¹

Accordingly, the terms “minimal amount of illumination,” “minimum illumination,” and “substantially no illumination” are indefinite. Neither the specification, prosecution history, nor cited extrinsic evidence provide a person of ordinary skill in the art with reasonable certainty as to the bounds of the claim scope.

B. Optical Element

Claim Term	Defendants' Construction	Ultravision's Construction
<p>“optical element … comprises … a first element … a second element … and a third element” ’803: 3, 12 ’642: 16-17, 23-24</p>	<p>“an assembly of lenses, distinct from a single reflecting prism”</p>	<p>No construction necessary or, if the Court deems construction necessary, then</p>
<p>“optical elements each including a first portion, a second portion and a third portion” ’642: 1 ’307: 1, 20</p>		<p>“optical element” in ’803:3, 12 and ’642:16- 17, 23-24 – “lens that comprises multiple elements”</p>
<p>“optical elements … each include a first portion, a second portion and a third portion” ’307: 15</p>		<p>“optical element” in ’642:1 and ’307:1, 15, 20, 25 – “lens that includes multiple portions”</p>

Federal Circuit explained that “difficulty in avoiding infringement” is not the test for indefiniteness. *Id.*

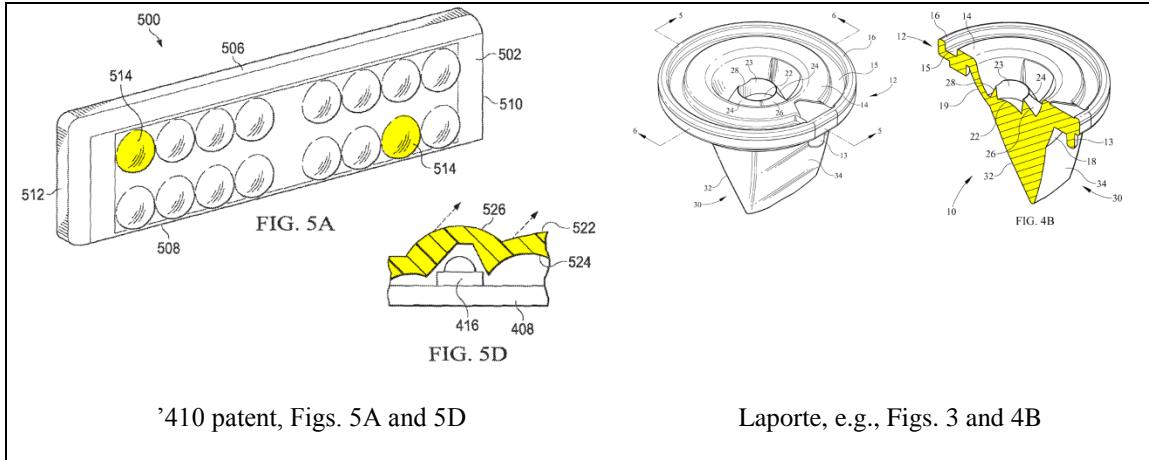
¹¹ Defendants also note that all of the case law cited by Ultravision in this section of its brief issued prior to the Supreme Court’s decision in *Nautilus*, 134 S. Ct. 2120, which eased the standard for indefiniteness of claim terms. Pl. Br. at 18-19.

“each optical element … including a first portion, a second portion and a third portion” ’307: 25		
--	--	--

The dispute between the parties here is whether the terms “optical element” that comprise or include first, second and third “elements” or “portions” can be a single prism (i.e., a transparent object with reflecting and refracting surfaces) or whether such “optical element” must be an assembly of separate lenses. Defendants’ construction is consistent with the claim language, the specification, and the prosecution history, which make clear that the named inventors were distinguishing the claimed invention over prior art single reflecting prisms.

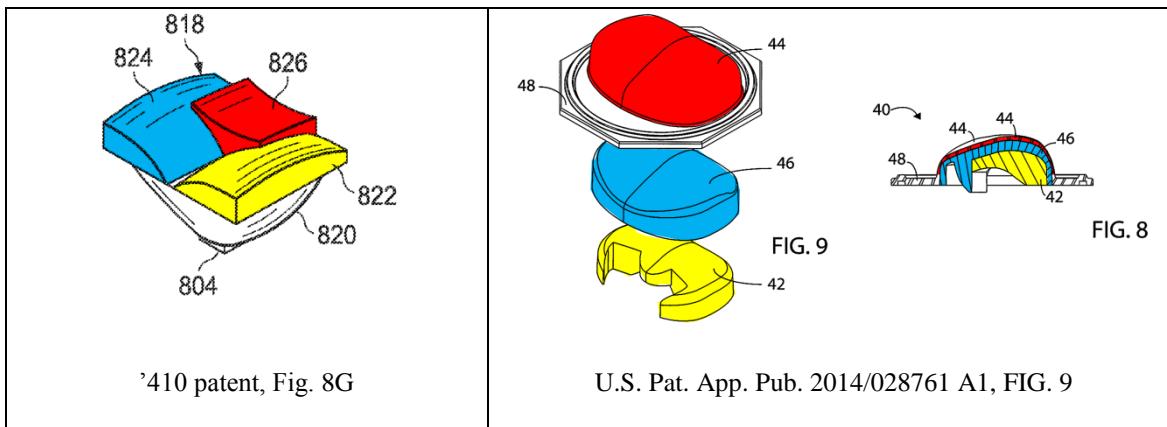
1. Molded vs Assembled Lenses

In the field of optical engineering, there are two basic ways to form an “optical element.” Bentley Decl. ¶ 23. The first is to construct a single lens. Although some applications use grinding or milling to form single lenses, particularly where the medium is glass (for example, lenses for reading glasses), injection molding is typically used to form lenses for illumination applications, particularly when the medium is acrylic. *Id.* ¶¶ 24-25. Injection molding involves designing a mold that has the inverse shape of the desired lens which is typically described by mathematical formulas. *Id.* ¶ 26. Figure 5A (element 514) of the patents-in-suit and the “reflecting prism” described in U.S. Patent No. 8,002,435 (Bentley Decl., Ex. 1 (“Laporte”)) are examples of what a person of ordinary skill in the art would have understood to be single molded lenses. *Id.* ¶ 27.



The second approach is to form an optical element by assembling separate lenses together.

Id. ¶ 29. This is often accomplished by using an adhesive, typically with an index of refraction that closely matches the index of refraction of the lens material. *Id.* ¶ 32. A person of ordinary skill in the art would have understood that Figure 8 of the patents-in-suit, and Figures 8-9 of cited U.S. Patent Publication 2014/0268761 A1, (Bentley Decl., Ex. 4) are examples of this second type of optical element.



Id. ¶¶ 31, 40. A person of ordinary skill in the art would have understood that each of these approaches to forming an optical element has its own considerations in terms of how the optical element will refract and reflect light. *Id.* ¶ 34. For example, if a design requires sharp angles and discontinuities, the optical element will not perform as designed if it is molded. *Id.* ¶ 35.

2. The Claims Support Defendants' Construction

The plain language of the claims at issue indicates that the “optical elements” having three elements or portions must be formed by assembling separate lenses. Not only do these claims recite three different “elements” or three different “portions,” they each recite limitations concerning the physical orientation of the elements to each other. For example, claims 3 and 12 of the ’803 patent and claims 16-17 and 23-24 of the ’642 patent all require that the first, second, and third elements each be “*disposed at*” first, second, and third sides. There is no dispute that the plain and ordinary meaning of the verb “to dispose” is “to place, distribute, or arrange.”¹² Likewise claim 1 of the ’642 patent and claims 1, 15, 20 and 25 of the ’307 patents each require that the three separate elements or portions are “*arranged* to direct the light” and there is no dispute that the plain and ordinary meaning of the verb “to arrange” is “put into the required or suitable order.”¹³ Similarly, claim 3 of the ’803 patent and claims 17 and 24 of the ’642 patent require that “inner and outer surfaces,” of the different first and second elements “*connect* at a connection region” and there is no dispute that the plain and ordinary meaning of the verb “to connect” is “to join, fasten or link together usually by means of something intervening.”¹⁴ Thus the claim language itself compels the conclusion that the named inventors were describing how to physically assemble separate lenses in a particular orientation to form the claimed optical element. That would have been the conclusion drawn by a person of ordinary skill in the art when the named inventors first applied for the asserted patents in 2012. Bentley Decl. ¶¶ 37-38.

¹² *Glick v. U.S. Toy Co.*, No. 01-0260-CV-W-3, 2001 WL 36169593, at *2 (W.D. Miss. Nov. 19, 2001) (citing *Merriam Webster's Collegiate Dictionary*).

¹³ *Hayes Lemmerz Int'l, Inc. v. Kuhl Wheels, LLC*, No. 03-cv-70181, 2007 WL 1219043, at *11 (E.D. Mich. Apr. 25, 2007) (citing *The Oxford Dictionary and Thesaurus*).

¹⁴ *Dimension One Spas, Inc. v. Coverplay, Inc.*, No. 03cv1099, 2005 WL 6258667, at *21 (S.D. Cal. Dec. 2, 2005) (citing *Webster's Third New Int'l Dictionary*).

3. The Specification Supports Defendants' Construction

The specification likewise supports Defendants' proposed construction. The specification refers to two different "optical elements" – optical element 806 and optical element 514 (or lens structure 522¹⁵). Based on how those respective elements are described, a person of ordinary skill in the art would have understood that optical element 806 is an assembly of separate elements or portions, whereas optical element 514 is not. According to the specification, "optical element 806 may include multiple lens elements designed to distribute the illumination" produced by a single LED. '410 patent at 8:6-9. These "lens elements" are designated as separate items 820, 822, 824, and 826, and are shown as an assembly of separate elements or portions joined at specific interfaces in Figure 8. *Id.* at 8:9-15 and Fig. 8D-I;¹⁶ Bentley Decl. ¶ 40. The specification further explains that "lens elements 822, 824, and 826 may be *positioned* above the lens element 820." *Id.* at 8:9-15. As with the verbs "dispose," "arrange," and "connect" used in the claims here at issue, there is no dispute that the plain and ordinary meaning of the verb "to position" is "to put in a or the proper position: place, situate."¹⁷ A person of ordinary skill in the art would have understood that the "multiple lens elements" of assembled optical element 806—elements 820, 822, 824, and

¹⁵ Figure 5 and the specification describing Figure 5 treat "lens structure 522" as interchangeable with "optical element 514." Specifically, the specification states that "optical elements 514" are configured to project LED light onto the entire surface of the billboard ('410 patent at 5:4-6) and that "by designing *the lens* in such a manner ... the light from the collective thereof will illuminate the surface at the 3:1 ratio." *Id.* at 5:16-19. The only antecedent basis for the "lens" purportedly so designed is the preceding optical element 514. The specification goes on to describe Figure 5C as illustrating "a detail of the lens assembly" (*id.* at 5:26-42) and Figure 5D as illustrating "a detail of the lens structure 522." *Id.* at 5:43-48.

¹⁶ During prosecution, the named inventors informed the PTO that element 826 is the third element of the claims of the '803 patent. Ex. M at 16-17.

¹⁷ *Knopik v. Amoco Corp.*, 96 F. Supp. 2d 892, 905 (D. Min. 2000), *aff'd*, 95 F. App'x 332 (Fed. Cir. 2004) (citing *Webster's Third New Int'l Dictionary*).

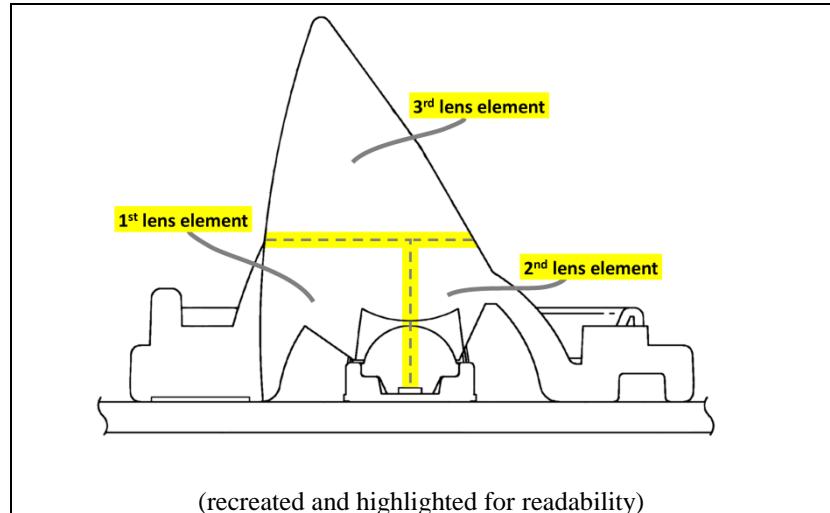
826—are each “a lens” made from a single piece of transparent material like glass or acrylic. Bentley Decl. ¶ 40 (citing Warren J. Smith, *Modern Lens Design* (2d 2005)).

On the other hand, optical element 514 and lens structure 522 shown in Figures 5A-5D, are single, unitary lenses. Bentley Decl. ¶ 41-42. Nothing in the specification states or suggests that optical elements 514 or lens structures 522 have different elements or portions as recited in the specific claims at issue here and described with respect to optical element 806. To the contrary, a person of ordinary skill would have understood the cross-section of lens structure 522 in Figure 5D plainly to show a unitary optical element without any interfaces that are the unavoidable consequence of “disposing,” “arranging,” “connecting,” and “positioning” different optical elements with respect to one another. Bentley Decl. ¶ 42. Further, the specification explains that for optical element 514, lens structure 522 having interior surface 524 and exterior surface 526 supposedly “shapes and directs the light in the correct pattern,” whereas for optical element 806, it is the lens elements 820, 822, 824, and 826 that are purported to be “designed to distribute the illumination.” ’410 patent at 5:43-46, 8:6-12. A person of ordinary skill in the art would have understood this distinction to indicate that optical element 514 is a single, continuous lens. Accordingly, the person of ordinary skill in the art would have understood optical element 806, but not 504, is relevant to understanding the meaning of the claim terms at issue in this section.

4. The Prosecution History Supports Defendants’ Construction

The prosecution history is also consistent with Defendants’ construction and evidences that the named inventors disclaimed from the scope of the claims at issue a single unitary lens. Bentley Decl. ¶ 44. Specifically, during prosecution of the application that led to the issuance of the ’803 patent, the Examiner rejected then-pending claims 1-3, 5-7, and 9-18 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 8,002,435 (“Laporte”). Ex. N at 9. In pointing to Laporte Figures 5A and 11, the Examiner stated that Laporte discloses an optical element 10 with the three claimed

lens elements of the claimed optical element. The Examiner included within this rejection a version of Figure 5A that he “simplified and annotated to clearly reference the claimed lens elements”:



In response, the named inventors amended each of these rejected claims (directly and through dependency)¹⁸ to describe the first, second, and third elements in more structural detail and to specify that the outer surfaces of the first and second elements “intersect,” (pending claim 1) “connect,” (pending claim 5) or “join” (pending claim 14) at a “region,” “connection region,” or “joint,” respectively. Ex. M, at 10. The named inventors then argued:

Laporte does not disclose or suggest the claimed structural features. Rather, the Office points to a single reflecting prism as having all the three elements of the optical element. The other cited prior art do not cure this deficiency. Therefore, independent claim 1 is allowable.

Id. at 18. The named inventors repeated this argument for then-pending independent claims 5 and 14. Specifically, the named inventors noted the amendments to the structural features of the claimed first, second, and third elements, and then stated that “[a]s described above with respect

¹⁸ Then-pending claims 15-17 were cancelled in this response to the first office action. Ex. M, at 10.

to claim 1, the prior art does not teach or suggest these limitations.” *Id.* Thus, contrary to Ultravision’s suggestion that the named inventors disclaimed a single reflecting prism only once and only in regard to then-pending claim 1 (see Pl. Br. at 24), they also distinguished then-pending claims 5 and 14 from the single reflecting prism of Laporte. Then-pending claim 5 issued as claim 3 of the ’803 patent, which is one of the claims Defendants have proposed for construction. Bentley Decl., Ex. 8 (“’803 patent”) at 9:37-10:2.

Clear and unmistakable statements made to distinguish a claimed feature over prior art act as a disclaimer. *Tech Props. Ltd. v. Huawei Techs. Co.*, 2016-1306, slip op. at 12-14 (Fed. Cir. Mar. 3, 2017). Here, a person of ordinary skill in the art would have understood that the named inventors elected to claim their lens assembly embodiment shown in Figure 8 (optical element 806) and disclaimed their single molded lens embodiment akin to a single reflecting prism shown in Figure 5 (optical element 514 and lens element 522) from the scope of these claims.

5. Ultravision’s Argument That No Construction Is Necessary Fails

Ultravision offers no coherent support for its assertion that no construction is necessary for the terms. Ultravision argues that no construction is needed because the claim terms are, according to Ultravision, terms that the jury “can easily understand without further construction.” Pl. Br. at 22. But that is not the correct analysis. First, absent lexicography or clear and unmistakable disavowal (not at issue here), “the words of a claim are generally given their ordinary and customary meaning,” which is “the *meaning that the term would have to a person of ordinary skill in the art* in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312-13. Ultravision has not offered any evidence of how a person of ordinary skill in the art would have viewed these terms nor has it established that the

terms pertaining to optical design are commonly understood by lay people.¹⁹ Second, it is well-established that a court must construe a term where there is a fundamental dispute over the proper construction. *See, e.g., O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008). Here, there is a fundamental dispute: whether the optical element must be an assembly of lenses, distinct from a reflecting prism, or whether it can be a single lens like the one in Laporte.

6. Ultravision's Additional Arguments Also Fail

Ultravision incorrectly argues that even if the named inventors disclaimed a single reflecting prism from the scope of the optical element term in then-pending claim 1, their disclaimer should not apply to the same term in other claims of the same patent. Pl. Br. at 24. But a disclaimer applies to the same term in different claims where the patentee makes the same arguments as to those claim during prosecution. *See Desper Prods., Inc. v. QSound Labs, Inc.*, 157 F.3d 1325, 1337 (Fed. Cir. 1998). Ultravision's suggestion that the disclaimer should not apply because then-pending claim 1 was ultimately cancelled fails. First, as explained above, the named inventors made the applicable argument to assert patentability of then-pending claims 5 and 14. Second, where a patentee makes an argument in support of patentability that applies equally to claims that ultimately issue, it is proper to apply disclaimer to the issued claims. *See Mangosoft, Inc. v. Oracle Corp.*, 525 F.3d 1327, 1332-33 (Fed. Cir. 2008) (“Moreover, having incorporated the term ‘local’ and having represented to the examiner that it had ‘[i]n general ... amended claim 1 to include the subject matter of claim [] 2,’ Mangosoft cannot now argue that

¹⁹ The only statement made by Ultravision's expert on the matter is his unsupported agreement with Ultravision's proposed constructions. Coleman Decl. ¶ 53. But Ultravision does not even cite this paragraph of the Coleman declaration in its brief, nor should it. Dr. Coleman's opinion is *ipse dixit* and is entitled to no weight. *Phillips*, 415 F.3d at 1318 (“conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court”).

‘local’ should be interpreted inconsistently with both cancelled claim 2 and the definition found in the specification”’); *see also Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1349-50 (Fed. Cir. 2004). Thus, the disclaimer applies equally to these claims.

Ultravision likewise incorrectly suggests that this disclaimer should not apply to the other claims because it is purportedly at odds with the specification. Specifically, Ultravision asserts that the specification “describes the optical element as a lens comprised of multiple elements—not multiple lenses.” Pl. Br. at 25. To the contrary, the specification plainly states that “a single optical element 806 may include multiple lens elements” and that to that end, “[a] first lens element 820 may be positioned proximate to the LED 804, and additional lens elements 822, 824, and 826 may be positioned above the lens element 820.” ’410 patent at 8:6-15. Thus, the specification and the prosecution history are consistent with Defendants’ proposed construction.

Ultravision also incorrectly asserts that disclaimer does not apply to later-issued related patents. Here, there is no dispute that the ’803, ’642, and ’307 patents are related. Pl. Br. at 1. Courts have frequently applied a disclaimer to the same term in related patents. *See, e.g., Multi-Tech*, 357 F.3d at 1349-50; *see also Teva Pharm.*, 789 F.3d at 1340 (“A statement made during prosecution of related patents may be properly considered in construing a term common to those patents, regardless of whether the statement pre- or post-dates the issuance of the particular patent at issue.”). Ultravision’s citation to *Nystrom*, 424 F.3d at 1147-48 is inapposite. In that case, the district court construed the term “convex top surface” to require a ratio of between 4:1 and 6:1, even in claims that did not recite any explicit ratio whatsoever, based on a statement from the prosecution history. *Id.* at 1146-47. The Federal Circuit reversed, concluding that the statement in question was specifically directed towards claim 16 which it noted included claim language “expressly providing for a radius of curvature ratio of approximately 5:1.” *Id.* Here, in contrast,

the named inventors distinguished the claimed optical element in multiple claims from the single reflecting prism of Laporte. *See supra* at 22-24. Ultravision itself concedes that these claims recite similar structural features of the claimed optical element. *See* Pl. Br. at 23.

Ultravision’s argument that the use of ellipses in the terms to be construed would confuse the jury is also unavailing. Claim terms are frequently construed in this manner. *See, e.g., Cadence Pharm. Inc. v. Exela PharmSci Inc.*, 780 F.3d 1364, 1372-73 (Fed. Cir. 2015); *Vasudevan*, 782 F.3d at 675; *Union Pac. Res. Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 689-90 (Fed. Cir. 2001). This is for good reason. A patentee should not be able to avoid claim construction by writing lengthy claims. This is especially true where, as here, the named inventors have convinced the PTO that their claims are novel based on a limitation that is distributed throughout claims that are an average of over 250 words long.

7. Ultravision’s Proposed Construction Should Be Rejected

Finally, Ultravision’s alternative proposed constructions should be rejected. Ultravision proposes that the Court construe “optical element” in claims 3 and 12 of the ’803 patent, and claims 16, 17, 23, and 24 of the ’642 patent as “lens that comprises multiple elements,” and construe “optical element” in claim 1 of the ’642 patent and claims 1, 15, 20, and 25 of the ’307 patent as “lens that includes multiple portions.” First, Ultravision’s proposal that the Court should construe an “*optical element*” that comprises multiple elements as a “*lens* that comprises multiple elements” suggests that the “multiple elements” are not themselves lenses. That is flatly inconsistent with the specification’s teaching that, e.g., “a single optical element 806 may include multiple lens elements” and that “lens elements 822, 824, and 826 may be positioned above the lens element 820.” ’410 patent at 8:6-12. Second, and as noted above, Ultravision provides no evidence regarding how a person of ordinary skill in the art would have understood the terms “optical element,” “element,” and “portion,” nor does it provide any argument or support for the notion

that these optical design terms are readily understood by lay individuals. Moreover, neither the term “element” alone nor “portion” (as it relates to an optical element) appears in the specification. Ultravision provides no explanation for why a person of ordinary skill in the art would have understood “element” to mean something different than “portion.” Accordingly, Ultravision’s proposed constructions are without support and should be rejected.

Accordingly, Defendants respectfully submit that its proposed constructions are consistent with the intrinsic evidence and the understanding of those of ordinary skill in the art, and thus should be adopted.

C. Means for Directing Light

Claim Term	Defendants’ Construction	Ultravision’s Construction
“means for directing light” 803:1	<u>35 U.S.C. § 112(6) function:</u> directing light <u>35 U.S.C. § 112(6) structure:</u> optical element, as shown in Figs. 8A-8J and described in col. 8, ll. 14-30	No construction necessary; this term is not governed by 35 U.S.C. § 112(6)

The final dispute is whether the term “means for directing light” is governed by 35 U.S.C. § 112, ¶ 6. There is a rebuttable presumption that the patentee invoked § 112, ¶ 6 through the use of the term “means.” *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1361 (Fed. Cir. 2000). Ultravision can rebut this presumption “if the properly construed claim limitation itself recites sufficiently definite structure to perform the claimed function.” *Id.* Where a person of ordinary skill in the art must still consult the specification in order to understand the *particular structure* for performing the claimed function, the presumption is not rebutted. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1376 (Fed. Cir. 2003).

The recited structure that Ultravision argues rebuts the presumption that § 112, ¶ 6 has been invoked does not provide sufficient structure *within the claims themselves* to perform the recited

function. First, Ultravision ignores the fact that the inquiry into the sufficiency of recited structure is viewed from the perspective of the ordinary person of skill in the art. *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1365-66 (Fed. Cir. 2003). The only evidence Ultravision puts forth on this issue is its expert's conclusory agreement with Ultravision's counsel that “[t]he structural features included in the claim language are sufficient for the optical element to perform the recited function of directing light.” Pl. Br. at 30 (citing Coleman Decl. ¶ 65). Dr. Coleman provides no explanation or analysis, and thus his purported opinion is entitled to no weight.²⁰

Second, a person of ordinary skill would not be able to understand the recited structure identified by Ultravision without reference to Figure 8 of the '803 patent. Bentley Decl. ¶ 50. This is not surprising given that (a) the recited structure in claim 1²¹ about disposing elements at “sides”

²⁰ Moreover, neither Ultravision nor Dr. Coleman explain why the named inventors would have chosen to invoke § 112, ¶ 6 for three other claim terms in the claim at issue, but not for “means for directing light.” Dkt. 157, App’x A, at 1-2.

²¹ For the Court’s convenience, claim 1 of the '803 patent recites:

“each means for directing light . . . is proximate one associated means for emitting light . . . such that light . . . is configured to exit towards the billboard from an associated means for directing light, wherein each of the associated means for directing light comprises:

a first side, a second side opposite the first side, and a third side perpendicular to the first side and the second side,

a first element disposed at the first side,

a second element disposed at the second side, and

a third element disposed at the third side, wherein the third element extends beyond the first element and the second element in a direction away from the means for emitting light,

wherein, in the direction away from the associated means for emitting light, the first element includes a first outer surface protruding outwards and a first inner surface having a concave-like curvature and the second element includes a second outer surface protruding outwards and a second inner surface having a concave-like curvature, the second outer surface being different than the first outer surface and the second inner surface being different than the first inner surface,

wherein the first outer surface joins with the second outer surface at a joint having an outer surface different from the first and the second outer surfaces, wherein the first inner surface joins with

and different “surfaces” of two of the elements joining “at a joint” were all described for the first time by Ultravision’s prosecution counsel in distinguishing the claimed element from the single reflecting prism of Laporte (*see Section IV(B)(4), supra*); (b) how light is “directed” by an optical element is highly dependent on the structure of the lens or optical element (Bentley Decl. ¶¶ 49-50); and (c) the structure described by Ultravision’s counsel in claim 1 of the ’803 patent is not a standard structure, such as a microprocessor, that those of skill in the art would readily understand. *See also Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1365 (Fed. Cir. 2000) (concluding that the term “baffle” in “second baffle means” connoted sufficient structure, as that term was defined structurally in common dictionaries”); *Greenberg v. Ethicon Endi-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (finding that claim term “detent mechanism” did not invoke § 112, ¶ 6 because it “denotes a type of device with a generally understood meaning in the mechanical arts”). Here, the sole support for the structure described in claim 1 of the ’803 is Figure 8 and the two sentences describing that figure at column 8, lines 22-28 of that patent. Accordingly, Figure 8 provides the structure for the recited function.²²

TecSec, Inc. v. IBM, 731 F.3d 1336, 1347-48 (Fed. Cir. 2013), cited by Ultravision, is distinguishable. There, the court explained that the first term at issue, “system memory means,” was required to perform the general, non-complex function of storing data. *Id.* There was no question that those of skill in the art would understand that system memory could perform this simple function. *Id.* The court explained that the other term at issue, “digital logic means,” did not invoke § 112, ¶ 6 because the limitation did not recite any function. *Id.* Here, there is no

the second inner surface at the joint having an inner surface different from the first and the second inner surfaces.”

²² It is entirely appropriate to rely on figures in the specification to determine corresponding structure for a term that invokes § 112, ¶ 6. *Freeman v. Gerber Prods. Co.*, 120 F. App’x 322, 326 (Fed. Cir. 2005) (non-precedential) (collecting cases).

question that the phrase “means for directing light” itself does not identify sufficient structure, and that, unlike storing data, “directing light” is not a simple function whose structures would be immediately understood by one of skill in the art.

Because claim 1 does not recite structure sufficient for performing the function of “directing light,” Defendants respectfully request that the Court adopt Defendants’ construction.

V. CONCLUSION

For the foregoing reasons, Defendants respectfully request that the Court find the terms “uniformly illuminate,” “uniform illumination,” “substantially uniform,” “minimal amount of illumination,” “minimal illumination,” and “substantially no illumination” invalid as indefinite, and adopt Defendants’ proposed constructions for the optical element terms and “means for directing light.”

Respectfully submitted,

/s/ Jennifer H. Doan

Jennifer H. Doan
Texas Bar No. 08809050
J. Randy Roeser
Texas Bar No. 24089377
HALTOM & DOAN
6500 Summerhill Road, Suite 100
Texarkana, TX 75503
T: (903) 255-1000; F (903) 255-0800
Email: jdoan@haltomdoan.com
Email: rroeser@haltomdoan.com

Terry Kearney (CA Bar No. 160054)
terry.kearney@lw.com
Richard G. Frenkel (CA Bar No. 204133)
rick.frenkel@lw.com
Nikolaus A. Woloszczuk (CA Bar No. 286633)
nick.woloszczuk@lw.com
LATHAM & WATKINS LLP
140 Scott Drive
Menlo Park, CA 94025
T: (650) 328-4600; F: (650) 463-2600

Melissa A. Brand (MA Bar No. 569028)
melissa.brand@lw.com
LATHAM & WATKINS LLP
200 Clarendon St.
Boston, MA 02116
T: (617) 948-6000; F: (617) 948-6001

Kyle A. Virgien (CA Bar No. 278747)
kyle.virgien@lw.com
LATHAM & WATKINS LLP
505 Montgomery St.
San Francisco, CA 94111
T: (415) 391-0600; F: (415) 395-8095

Stephen D. O'Donohue (NY Bar No. 5231246)
stephen.odonohue@lw.com
LATHAM & WATKINS LLP
885 Third Avenue
New York, NY 10022
T: (212) 906.1200; F: (212) 751-4864

David A. Zucker (DC Bar No. 89713)
david.zucker@lw.com
LATHAM & WATKINS LLP
555 Eleventh Street, NW, Suite 1000
Washington, DC 20004
T: (202) 637-2200; F: (202) 637-2201

**ATTORNEYS FOR DEFENDANTS AND
COUNTERCLAIMANTS LAMAR
ADVERTISING COMPANY, LAMAR
MEDIA CORP., THE LAMAR
COMPANY, L.L.C., AND LAMAR
TEXAS LIMITED PARTNERSHIP**

/s/ Brian McQuillen _____

Brian McQuillen
(admitted pro hac vice)
bmcquillen@duanemorris.com
Jordana Garellek
(admitted pro hac vice)
jgarallek@duanemorris.com
DUANE MORRIS LLP
1540 Broadway
New York, NY 10036-4086
T: (212) 692-1000; F: (212) 692-1020

Matt Gaudet
GA Bar No. 287789
mcgaudet@duanemorris.com
DUANE MORRIS LLP
1075 Peachtree Street, NE, Suite 2000
Atlanta, GA 30309-3929
T: (404) 253-6900; F: (404) 253-6901

Diana M. Sangalli
TX Bar No. 24033926
dmsangalli@duanemorris.com
DUANE MORRIS LLP
1330 Post Oak Blvd., Suite 800
Houston, TX 77056-3166
T: (713) 402-3900; F: (713) 402-3901

Jennifer H. Doan
Texas Bar No. 08809050
J. Randy Roeser
Texas Bar No. 24089377
HALTOM & DOAN
6500 Summerhill Road, Suite 100
Texarkana, TX 75503
T: (903) 255-1000; F (903) 255-0800
Email: jdoan@haltomdoan.com
Email: rroeser@haltomdoan.com

**ATTORNEYS FOR DEFENDANTS
AMERICAN LIGHTING
TECHNOLOGIES, INC. D/B/A
LIGHTING TECHNOLOGIES, INC.
AND IRVIN INTERNATIONAL, INC.**

CERTIFICATE OF SERVICE

I certify that on the 14th day of March, 2017, I electronically filed the foregoing with the Clerk of the Court and the same has been served on all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Jennifer H. Doan
Jennifer H. Doan